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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/780,355	02/12/2001	Noboru Kimura	108564	8065

25944 7590 05/21/2003  
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ALEXANDRIA, VA 22320

EXAMINER

PATTERSON, MARC A

ART UNIT	PAPER NUMBER
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1772

DATE MAILED: 05/21/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/780,355

Applicant(s)

KIMURA ET AL.

Examiner

Marc A Patterson

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1772

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 28 February 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-22 and 25-27 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-22 and 25-27 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

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## DETAILED ACTION

### WITHDRAWN REJECTIONS

1. The 35 U.S.C. 102(b) rejection of Claims 1 – 20 as being anticipated by Kimura et al (European Patent No. 0842913) and 35 U.S.C. 103(a) rejection of Claims 21 – 22 as being unpatentable over Kimura et al (European Patent No. 0842913), of record on page 2 of the previous Action, are withdrawn.

### NEW REJECTIONS

#### *Claim Rejections - 35 USC § 103*

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1 – 22 and 25 – 27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kimura et al (European Patent No. 0842913) in view of Kimura et al (U.S. Patent No. 5,674,317).

With regard to Claims 1 and 15 – 18, Kimura et al ('913) disclose a pyrolytic boron nitride container for a source of molecular beams used in epitaxy (page 2, lines 5 – 10) wherein the transmissivity of the inner container with respect to light having a wave number of  $2600\text{ cm}^{-1}$  to  $6500\text{ cm}^{-1}$  is 90% or less than that of the outer container (the inner container, its bottom portion, has a transmissivity less than 90% of the transmissivity of the outer container, the

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portion adjacent to the opening; page 3, lines 6 – 9; page 5, lines 26 – 58; page 9, lines 10 – 15).

Kimura et al ('913) fail to disclose a container which is a double container.

Kimura et al ('317) teach that it is well known in the art to use a container for molecular beam epitaxy (column 1, lines 8 – 14) which is contained in a susceptor (column 5, lines 19 – 34; Figure 4) for the purpose of preparing a single crystal having a large diameter (column 1, lines 8 – 14).

It therefore would have been obvious for one of ordinary skill in the art at the time Applicant's invention was made to have provided for use a container for molecular beam epitaxy which is contained in a susceptor (therefore a double container) in Kimura et al ('913) in order to prepare a single crystal having a large diameter as taught by Kimura et al ('317).

With regard to Claim 2, the outer surface of the inner container disclosed by Kimura et al ('913) is roughened (page 7, lines 54 – 57).

With regard to Claims 3 – 4 and 7 – 10, silicon is doped into the inner container disclosed by Kimura et al ('913) to form a doped layer (page 8, lines 5 – 30).

With regard to Claims 5 – 6, the doped layer disclosed by Kimura et al ('913) is located within the wall of the inner container (page 8, lines 5 – 30).

With regard to Claims 11 – 12, the thickness of the inner container disclosed by Kimura et al ('913) is greater than that of the outer container (page 3, lines 44 – 46).

With regard to Claims 13 – 14, the transmissivity of the inner container disclosed by Kimura et al ('913) changes in the height direction of the container (page 3, lines 6 – 15).

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With regard to Claims 19 – 20, there is a gap between the inner container and outer container disclosed by Kimura et al ('913) (a center portion; page 9, lines 10 – 15).

With regard to Claims 21 – 22, Kimura et al ('913) fail to disclose a gap which is 0.2 to 30 mm wide. However, Kimura et al disclose a gap which is 5 cm (page 9, lines 31 – 35). Therefore, the width of the gap would be readily determined through routine optimization by one having ordinary skill in the art depending on the desired end use of the product. It therefore would be obvious for one of ordinary skill in the art to vary the width of the gap, since the width of the gap would be readily determined through routine optimization by one having ordinary skill in the art depending on the desired end result as shown by Kimura et al. *In re Boesch and Slaney*, 205 USPQ 215 (CCPA 1980).

With regard to newly submitted Claim 25, the transmissivity of the inner container disclosed by Kimura et al ('913) is 90% or less of the outer container transmissivity as discussed above; the claimed aspect of the transmissivity of the inner container being 70% or less of the outer container transmissivity therefore reads on Kimura et al ('913).

With regard to newly submitted Claims 26 – 27, the inner container disclosed by Kimura et al ('913) comprises pyrolytic boron nitride combined with pyrolytic graphite (page 5, lines 41 – 49).

#### ANSWERS TO APPLICANT'S ARGUMENTS

4. Applicant's arguments regarding the 35 U.S.C. 102(b) rejection of Claims 1 – 20 as being anticipated by Kimura et al (European Patent No. 0842913) and 35 U.S.C. 103(a) rejection of Claims 21 – 22 as being unpatentable over Kimura et al (European Patent No. 0842913), of

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record on page 2 of the previous Action, have been considered and have been found to be persuasive. The rejections are therefore withdrawn. The new 35 U.S.C. 112 second paragraph rejection of Claims 2 – 22 and 35 U.S.C. 103(a) rejection of Claims 1 – 22 and 25 – 27 as being unpatentable over Kimura et al (European Patent No. 0842913) in view of Kimura et al (U.S. Patent No. 5,674,317) above are directed to amended Claims 1 – 22 and 25 – 27.

Applicant's arguments regarding the 35 U.S.C. 112 second paragraph rejection of Claims 2 – 22, of record on page 2 of the previous Action, have been carefully considered but have not been found to be persuasive for the reasons set forth below.

Applicant argues that although the phrases 'so that' and 'such that' are functional, the phrases are not indefinite because their meanings would have been clear to one skilled in the art. However, as stated on page 2, the phrases appear to be directed to desired results, rather than structural limitations. Furthermore, the phrases make the nature of the structural limitations unclear; in Claim 2, a roughness 'so that transmissivity of the inner container is 90% or less of that of the outer container' is claimed, rather than an actual roughness, or a degree of roughness relative to the outer container.

### ***Conclusion***

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Marc Patterson, whose telephone number is (703) 305-3537. The

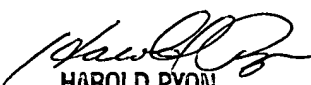
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examiner can normally be reached on Monday through Friday from 8:30 AM to 5:00 PM. If attempts to reach the examiner by phone are unsuccessful, the examiner's supervisor, Harold Pyon, can be reached at (703) 308-4251. FAX communications should be sent to (703) 872-9310. FAXs received after 4 P.M. will not be processed until the following business day.

Marc A. Patterson, PhD.

*Marc Patterson*

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HAROLD PYON  
SUPERVISORY PATENT EXAMINER  
1772 5/19/03